

Texas Occupational Health and Safety Surveillance: Fundamental Program

Texas Department of State Health Services

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Performance Period: Year 1 Progress Report (July 1, 2010 to June 30, 2011)

John F. Villanacci, Ph.D., NREMTI – Principal Investigator

Tel: 512-458-7269; Fax: 512-458-7222; Email John.Villanacci@dshs.state.tx.us

Susan L. Prosperie, M.S., R.S. Program Manager

Tel: 512-776-6704; Fax: 512-458-7222; Email Susan.Prosperie@dshs.state.tx.us

The overall aims of the Texas Department of State Health Services (TXDSHS) Occupational Health and Safety Surveillance project are to: compile and report data for 13-19 specific occupational health indicators, conduct detailed analysis to identify patterns and trends for these occupational health indicators, pilot other data sources for potential to identify cases of occupational illness and injury, provide training and education to enhance awareness and increase prevention, review and evaluate the Texas occupational safety and health surveillance system process, and assess the public health outcomes of the surveillance system.

Major Accomplishments and Outputs

Specific Aim 1: Compile and report Occupational Health Indicator (OHI) data for 13 specified occupational health indicators adding 2 indicators per year over the next 3 years to include the full set of 19 occupational health indicators.

TXDSHS staff compiled, analyzed and contributed data for inclusion in the multi-state Council of State and Territorial epidemiologists' (CSTE) Occupational Health Indicators Report for the years 2007 and 2008 adding 2 additional indicators each year. For the year 2007 Texas contributed 15 of the 19 occupational health indicators (Indicator #s 1-13, 15, and 16). The Texas data were checked internally for accuracy and then reported to NIOSH via CSTE. For the year 2008 Texas contributed data for 17 of the 19 occupational health indicators (Indicator #s 1-13, 14, 15, 16, and 18). The Texas data were checked internally by the program staff for accuracy and then submitted June 30, 2011 to NIOSH for quality assurance and ultimate inclusion in a national occupational health indicator report.

Specific Aim 2: Conduct detailed analysis to identify patterns and trends for the occupational health indicators.

This past year we began organizing multiple years of Texas hospital discharge data to allow trend analysis of work-related hospitalizations, work-related burns, and work-related pneumoconioses over the period from 2004-2008. Texas hospital discharge data comes to DSHS quarterly in "flat" text files on CDs, each containing approximately 750,000 hospitalization records. These quarterly data have been imported into Excel 2007, and a subset of the fields were selected and sequentially imported into an Access 2007 database, ultimately aggregating each entire years worth of data (generally about 2.9 million records per year). Records that were reported late (in with the following year's data) were separated out and put back with the appropriate year. Once the data were in an Access database with related tables necessary for decoding purposes, the data were run through a lengthy series of QA/QC queries to clean and recode data as necessary.

In addition to the records coded as "WC – Workers Compensation Health Claim" in either the Primary or Secondary Payment Source fields, DSHS identified additional codes of "02 – Condition is Employment Related" that could be coded in any one of eight "Condition Code" fields and "04 – Accident/ Employment Related" that could be coded in any one of 12 "Occur Code" fields. Searching these 20 other fields for the additional two codes indicating a work-related hospitalization, improved our case-finding by about 19-26% when compared to looking only for "WC" codes. After cleaning the data another series of standardized queries were run on each of the annual databases to generate numbers

for work-related hospitalizations, work-related burns, and (presumably) work-related pneumoconioses, all broken down by age, race, sex, ethnicity, and race/ethnicity. The results of each query were copied to an Excel spreadsheet in a standardized format and are currently being organized to allow trend analysis of work-related hospitalizations, work-related burns, and work-related pneumoconioses over the period from 2004-2008. We have considered using hospital discharge data for Texas from 1999-2003 but there were fewer fields in the earlier data sets and some of the codes were done differently. We are not sure how well the earlier data can meld with the newer data, but will explore the possibilities; having 10 years of data for evaluating time trends would be preferred.

Specific Aim 3: Pilot other data sources for potential to identify cases of occupational illness and injury.

- As mentioned above, while preparing the data for trend analysis we identified additional data fields (12 Occurrence code fields and 8 condition code fields) within the Hospital Discharge data that can be used to identify additional cases of occupationally related illness and injury.
- We tried using Carbon monoxide data from the Texas Poison Center Network but found that occupation was not reliably collected and information on many of the cases suggested they clearly were not occupational. We also considered replacing evaluation of the carbon monoxide exposure reports with DSHS wellness center data but were not able to obtain these data within this time frame as they currently are not available in a readily accessible format for analysis.
- The department is currently in the process of replacing the Texas Trauma Registry. We plan to explore other whether the Texas Trauma Registry or other potential data sources such as the Behavioral Risk Factor Surveillance System (BRFSS) could be used to identify cases of occupational illness and injury. The inclusion of data fields for recording work-relatedness has been suggested to coordinators.
- The program coordinated with NIOSH and the TxDSHS Vital Statistics to facilitate the coding of narrative from Texas death certificates into the NIOSH NOMS (National Occupational Mortality Surveillance) database.

Specific Aim 4: Provide training and education to enhance awareness and increase prevention.

- Plans progressed to redesign TDSHS occupational health indicators website to make it more easily navigable by the general public, researchers and other interested parties. Focus group feedback from students of Lehman High School in Kyle, TX and Jack Hays High School in Buda, TX on webpage design and overall appeal was obtained and will be incorporated to improve the usefulness of the DSHS OHI website. Concurrently, staff educated the student focus group on the importance of the program's strategic role in the collection of occupational health data in supporting the OHI's and their ultimate goal to prevent and minimize illnesses and injuries in the workplace.
- Staff gave presentations and/or provided information about the Texas' OHIs to: 70 Midwest Stream Farmworker Health Forum attendees in November 2010; other public health professionals (Health and Human Services Commission Toastmasters in July 2010; Texas Poison Center Specialists in Poison Information in April 2011), 80 academics in December 2010, and others (80 employees of Texas Department of Transportation at July 2010 workshop; 95 attendees at the City of Austin Health Fair, Sep 2010 and July 2011; 120 attendees of the Socorro Independent School District - Lower Valley Nurse's Association health fair in April 2011; 10 attendees from the Lubbock City Health Department in May 2011; 10 attendees of the National Partnership of Rural and Farmworker Organizations (MAFO) March 2011; and the Texas Department of Insurance Safety Summit May 2011).
- Staff hosted approximately 80 attendees at the November 2010 Consortium of State-based Surveillance (COSS) meeting in Austin, TX. A major discussion topic was the need to forge better ties with the Department of Labor, the Occupational Safety and Health Administration and the Texas Department of Insurance, Division of Workers' Compensation.
- Information on occupational pesticide exposure, heat exposure, transportation mortality and mesothelioma was dispersed to stakeholders through an informal scientific advisory committee consisting of representatives of the Association of Occupational Health Nurses, Texas Ergonomics Roundtable, Environmental Protection Agency, Texas Department of Agriculture, Texas Department of Insurance, the Texas Rural Health Association, National Farmworkers Association, Migrant Clinicians Network, Texas Border Health, the Department of Labor, Occupational Safety and Health

Administration (OSHA), and the deans of the University of Texas Southwest Center for Occupational Health in Houston, San Antonio, and Tyler, TX.

- Staff are working with NIOSH and DSHS webmaster to implement Really Simple Syndication (RSS) feed of Texas occupational health resource materials and reports to NIOSH.
- Staff met with the Capital Area Health Education Center (AHEC) and the Mexican Consulate in Austin to provide the latino community with information and educational support on occupational health and safety at the workplace. Additionally, this partnership aims to increase awareness and the reporting of occupational exposures to pesticides. Through the outreach program "Ventanilla de Salud", the Mexican Consulate in Austin and Capital AHEC provide relevant health education and screenings to an important segment of the latino population; with the use of targeted materials and short narratives, "promotoras" working at the "Ventanilla de Salud" increase awareness and encourage prevention of occupational injuries. Expanding OH education and awareness to the 11 Mexican Consulates in Texas through AHEC and "Ventanilla de Salud" are the next step.
- Staff met with and/or corresponded several times with the BRFSS coordinator, the TxDSHS Cancer Registries and Asthma Control Program staff to educate them on the importance of considering occupational health and to help support NIOSH 's attempt to add two questions on occupation and industry to the BRFSS questionnaire for 2012.
- The program provided data to the Texas Office of Border Health for years 2006-2010 on occupational pesticide exposures among border counties of Texas.
- Staff contacted a sampling of the more than 300 Federally Qualified Health Centers (FQHCs) in Texas discussing the importance of taking an occupational history and guiding them toward documents that would help them with that task

Specific Aim 5: Review and evaluate the Texas occupational safety and health surveillance system process.

- A detailed review and evaluation of the Texas occupational safety and health surveillance system process was completed in 2009. A predominant theme was that collaboration with partners was essential for progress to be made in the evaluation and dissemination of occupational health data. The program has since partnered with the Regional Dean of the University of Texas School of Public Health San Antonio and Texas A&M to generate graduate level class topics that focus on analysis of the CSTE occupational health indicators. This will give students experience working with occupational health data and contribute to dissemination of occupational health data via DSHS publications. Letters of support have been drafted to maintain consistency in the partnerships.
- The OHI program is working with Texas AgriLife with the intent of producing a training module in 2012 for healthcare and service industry professionals who work with transient populations including agricultural migrant workers.
- The program coordinator attended a national meeting of states with Federal OSHA representatives and NIOSH in Washington, D.C. in March 2011 to discuss partnerships and how better to share data and information between agencies. Immediately received feedback on how each group could better serve the other and within a week of the meeting received information on a few cases of occupational pesticide exposure that had remained open due to insufficient information. A new Memorandum of Agreement is being constructed to solidify this strengthened relationship.

Specific Aim 6: Assess the public health outcomes of the surveillance system.

Feedback obtained from a focus group of web-design students is being incorporated to improve the usefulness of the DSHS OHI website. After learning about the importance of occupational health surveillance and the role of the program's webpage and how it impacts their awareness and the general public's regarding prevention and safety, the student focus group provided suggestions on how to make it more effective and informative.

Potential/Intermediate/End Outcomes

The program staff contributed Texas' data for a number of publications:

Soo-Jeong Lee, Louise Mehler, John Beckman, Brienne Diebolt-Brown, Joanne Prado, Michelle Lackovic, Justin Waltz, Prakash Mulay, Abby Schwartz, Yvette Mitchell, Stephanie Moraga-McHaley, Rita Gergely, Geoffrey M Calvert. Acute Pesticide Illnesses Associated with Off-Target Pesticide Drift from Agricultural Applications — 11 States, 1998–2006; June 6, 2011.

Soo-Jeong Lee, Prakash Mulay, Brienne Diebolt-Brown, Michelle J. Lackovic, Louise N. Mehlers, John Beckman, Justin Waltz, Joanne B. Proado, Yvette A. Mitchell, Sheila A Higgins, Abby Schwartz, and Geoffrey M. Calvert. Acute illnesses associated with exposure to fipronil—surveillance data from 11 states in the United States, 2001–2007. Clinical Toxicology (2010) 48, 737–744.

Morbidity and Mortality Weekly Report (MMWR). Proportion of Workers Who Were Work-Injured and Payment by Workers' Compensation Systems — 10 States, 2007. Morbidity and Mortality Weekly Report. Vol. 59 / No. 29. July 30, 2010.

Forrester, Mathias B. and Diebolt-Brown, Brienne (2011) 'Total release fogger exposures reported to Texas poison centers, 2000-2009', Toxicological & Environmental Chemistry, First published on: 17 March 2011.

Plans for Next Year

- Add occupational health indicator #17 to complete the set of 19 indicators compiled for NIOSH (2009 data).
- Incorporate improvements to the OHI website based on input from student focus group and others.
- Resurvey health care providers/physicians as a followup to the program's 2008 survey of occupational and emergency department health care providers. The 2008 survey assessed health care provider awareness of reportable occupational conditions in Texas; the results will provide guidance for future work.
- Reach out to promotoras to increase occupational health condition reporting in Texas.